

Scanner Specifications

Scanner type:

Flatbed, color/monochrome

Photoelectric device:

CCD line sensor

Effective pixels:

2550 dots by 3510 dots at 300 dpi, 100%

Maximum document size:

216 mm by 297 mm (8.5 inches by 11.7 inches)
U.S. letter size or A4

Scanning resolution:

300 dpi

Output resolution:

50 dpi to 1200 dpi in 1 dpi steps

Color separation:

By switching light sources (R, G, B)

Reading sequence:

Monochrome mode:

One-pass scanning (Dropout color selectable from Red, Green, or Blue)

Color page sequence mode:

Three-pass scanning (R, G, B)

Color byte sequence mode:

Three-pass scanning (R, G, B)

Color line sequence mode:

One-pass scanning (R, G, B)

Size:

50% to 200% in 1% steps

Image data:

8 bits per pixel per color saved as 8 bits per pixel per color, maximum

Brightness:

7 levels

Text Enhancement Technology:

Enable/disable selectable

Halftoning process:

Enable/disable selectable

3 halftoning modes (A, B, and C)

4 dither patterns (A, B, C, and D)

for bi-level data or quad-level data
(2 downloadable dither patterns)

Gamma correction:

2 for CRT display

3 for printer

1 for user-defined

Color correction:

1 type for CRT display
3 types for printer output, available in color line sequence mode only
1 type for user-defined

Interface:

Bidirectional parallel or SCSI

Light source:

Noble gas fluorescent lamps

Reliability:

Main unit MCBF: 100,000 cycles of carriage movements

Dimensions and weight:

Width: 297 mm (11.9 inches)
Depth: 443 mm (17.7 inches)
Height: 87 mm (3.5 inches)
Weight: about 5 kg (11.1 lb)

Electrical Specifications

100–120 V model

Rated voltage:

100–120 VAC

Input voltage range:

90–132 VAC

Rated current:

0.5 A

Rated frequency:

50 to 60 Hz

Input frequency:

49.5 to 60.5 Hz

Power consumption:

Approx. 18 W (self test)

220–240 V model

Rated voltage:

220–240 VAC

Input voltage range:

198–264 VAC

Rated current:

0.3 A

Rated frequency:

50 to 60 Hz

Input frequency:

49.5 to 60.5 Hz

Power consumption:

Approx. 18W (self testing)

Safety, EMI, and EMS

100–120 V model

Safety:

UL1950 (+D3)
CSA 22.2 No. 950 (+D3)

EMI:

FCC 15B Class B: USA
CSA 108.8 Class B: CANADA

220–240 V model

Safety:

EN60950 (TÜV) EN60950 Nordic Deviation (NEMKO, FIMKO, DEMKO, SEMKO)

EMI:

EN55022 (CISPR Pub 22) Class B

EMS:

IEC 801-2, 801-3, 801-4

Environmental Conditions

Temperature:

Operation: 5°C to 35°C (40°F to 95°F)

Storage:

-20°C to 60°C (-4°F to 140°F)

Humidity:

Operation: 10% to 80%, without condensation

Storage:

10% to 85%, without condensation

Operating conditions:

Ordinary office or home conditions.

Avoid extreme dust.

Avoid operation under direct sunlight or near a strong light source.

Note:

Specifications are subject to change without notice.

Parallel Interface Specifications

Interface type:

Bidirectional parallel

Data format:

8-bit parallel

Synchronization:

By external strobe pulse

Handshaking:

By ACKNLG and BUSY signals

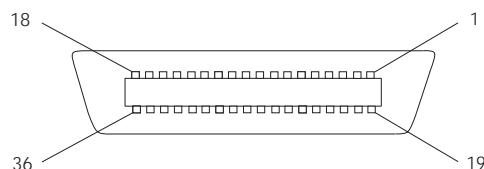
Logic level:

Input/output data and interface control signals are TTL-level compatible

Connector type:

36-pin Centronics® type connector

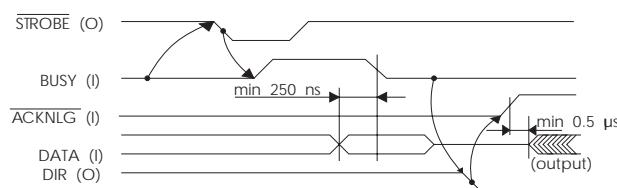
Connector pin arrangement:



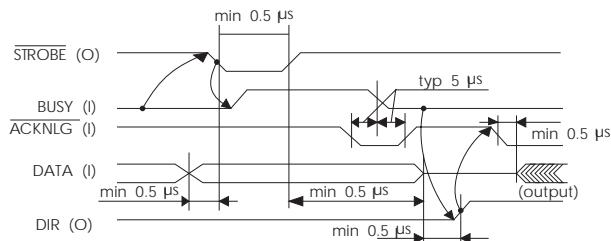
Timing Charts

The figures below show the timing for the bidirectional parallel interface as viewed from the scanner.

OUT (from scanner to computer)



IN (from computer to scanner)



Signal pin assignments

Pin No.	Return Pin	Signal	Direction	Function
1	19	STROBE	IN	STROBE pulse to read in or send out data. Pulse width must be more than 0.5 microseconds at the receiving terminal.
2	20	DATA0	IN/OUT	
3	21	DATA1	IN/OUT	
4	22	DATA2	IN/OUT	
5	23	DATA3	IN/OUT	
6	24	DATA4	IN/OUT	
7	25	DATA5	IN/OUT	
8	26	DATA6	IN/OUT	
9	27	DATA7	IN/OUT	
10	28	ACKNLG	OUT	About a 12-microsecond pulse. Low indicates that data has been received and that the scanner is ready to accept more data.
11	29	BUSY	OUT	When this signal is high, the scanner cannot receive or send data. The signal is high: 1) during data entry 2) when the scanner is not ready 3) when the scanner has an error
12–15	—	NC	—	Not used
16	—	GND	—	Logical ground level
17	—	C-GND	—	Scanner chassis ground
18	—	NC	—	Not used
19–30	—	GND	—	Twisted-pair return signal ground level
31	—	INIT	IN	When this signal level becomes low, the scanner is reset to the state when power is turned on. This level is usually High. The pulse width must be more than 50 microseconds at the receiving terminal.
32	—	NC	—	Not used
33	—	GND	—	Twisted-pair return signal ground level
34–35	—	NC	—	Not used
36	—	DIR	IN	Low indicates the direction is input

"Return Pin" denotes the twisted-pair return, to be connected at signal ground level. For interface wiring, be sure to use a twisted-pair cable for each signal, and to complete the connection on the return side. These cables should be shielded and the ground connected to the chassis of the host computer and the scanner.

All interface conditions are based on TTL level.

SCSI Specifications

Interface type:

ANSI X3.131-1986 standard

Function:

The following functions are included.

BUS FREE phase

ARBITRATION phase

SELECTION/RESELECTION phase

COMMAND phase

(Logical Unit Number is fixed to 0 and
command link function is not supported.)

DATA phase

 Data in phase

 Data out phase

STATUS phase

MESSAGE phase

 MESSAGE IN phase

 MESSAGE OUT phase

ATTENTION condition

RESET condition

Electrical standard:

As per ANSI X3.131-1986

ID Setting:

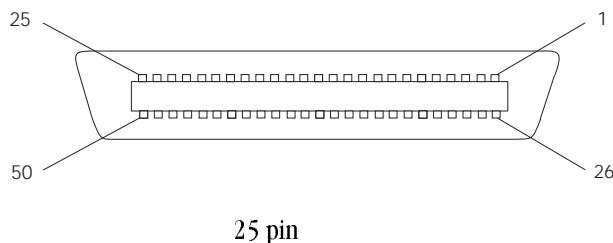
Selectable from 0 to 7 with the rotary switch.

Connector type:

25/50-pin connectors

Connector pin arrangement:

50 pin



Signal pin assignments

The direction of signals is as viewed from the scanner.

Signal	I/O	Pin No.		Description
		50 pin	25 pin	
GND	—	1–12 14–25 35–37 39–40 42	7,9 14 16 18 24	Ground
NC	—	13	—	Not connected
DB0	I/O	26	8	Data bus 0
DB1	I/O	27	21	Data bus 1
DB2	I/O	28	22	Data bus 2
DB3	I/O	29	10	Data bus 3
DB4	I/O	30	23	Data bus 4
DB5	I/O	31	11	Data bus 5
DB6	I/O	32	12	Data bus 6
DB7	I/O	33	13	Data bus 7
DBP	I/O	34	20	Data bus parity
TERMPWR	—	38	25	Termination power
ATN	I	41	17	Attention
BSY	I/O	43	6	Busy
ACK	I	44	5	Acknowledge
RST	I	45	4	Reset
MSG	O	46	2	Message
SEL	I/O	47	19	Select
C/D	O	48	15	Control/Data
REQ	O	49	1	Request
	I/O	50	3	Input/Output

Initialization

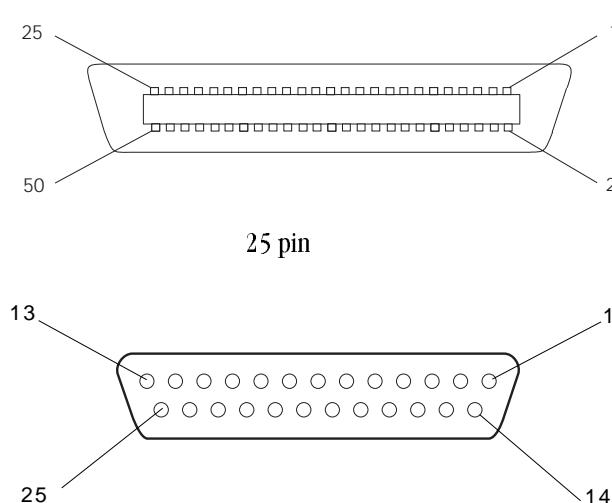
The scanner can be initialized (returned to a fixed set of conditions) in the following ways.

Hardware initialization:

- When the power is turned on.
- When the scanner receives an INIT signal at the parallel interface (pin 31 goes low).
- When the scanner receives a SCSI Reset signal at the SCSI interface.
- When you push the RESET button.

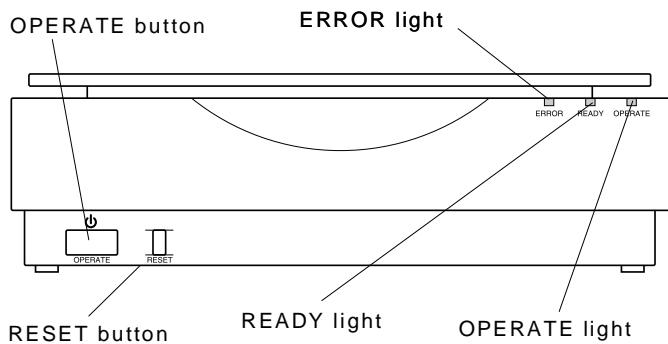
Software initialization:

- When the software command ESC @ (initialize the scanner) is received.
- When the SCSI Bus Device Message is received.



Lights and Buttons

The scanner has three indicator lights and two buttons.



OPERATE light (green)

Comes on when the scanner is turned on.

READY light (green)

Comes on when the scanner is ready to scan images. This light flickers during scanning. When an error occurs, this light and the ERROR light indicate the type of error.

ERROR light (red)

Indicates when an error occurs. Along with the READY light, it indicates the type of error.

OPERATE button

Turns the scanner on and off.

RESET button

Resets the scanner after an error occurs. Pressing this button during scanning stops the scanner and may cause an error in the scanning software.

Scanner Errors

If an error occurs, the scanner stops operating and the READY and ERROR lights show the type of error.

Error type	READY	ERROR
Command error	On	On
Interface error	Off	Flashing
Fatal error	Flashing	Flashing

Command Error

The scanner has received incorrect commands from the scanning software.

When this error occurs, try to rescan the document. The scanner returns to normal when it receives correct commands. Normally you do not need to reset the scanner.

Interface Error

The interface setup is wrong, or the scanner is not properly connected to the computer.

When this error occurs, check the interface connection. Then push the RESET button or turn the scanner off and then back on to reset it.

Fatal Error

This indicates one of the following problems:

- One or more fluorescent lamps needs to be replaced.
- The transportation screw has not been removed.
- The scanner is broken.

Check that the transportation screw has been removed; then push the RESET button. If the scanner still does not operate properly, try turning the scanner off, wait 10 seconds, and then turn it back on. If the scanner still does not operate properly, or if this error occurs repeatedly, consult your dealer.

Cleaning the Scanner

To keep the scanner operating at its best, clean it periodically. Before cleaning, unplug the power cable.

Clean the outer case with mild detergent dissolved in water.

If the document glass gets dirty, clean it with a soft dry cloth. If the glass is stained with grease or other hard-to-remove material, use a small amount of glass cleaner on a soft cloth to remove it. Wipe off any remaining liquid with a dry cloth.

Be sure there is no dust on the document glass. Dust can cause white spots in the scanned image.

Caution:

Do not scratch or damage the document glass, and do not use a hard or abrasive brush to clean it. A damaged glass surface can decrease the scanning quality.

Never use alcohol, thinner, or corrosive solvent to clean the scanner. These chemicals can damage the scanner components as well as the case.

Be careful not to spill liquid into the scanner mechanism or electronic components. This could permanently damage the mechanism and circuitry.

Do not spray lubricants inside the scanner.

Never open the scanner case.

Replacing the Fluorescent Lamps

The luminosity of the fluorescent lamps declines over time. If the lamps break or become too dim to operate normally, the scanner stops working and both the READY light and the ERROR light flash. When this happens, the lamp assembly must be replaced. For details, contact your dealer.

Caution:

Users should never open the scanner case.

Information Reference List

Engineering Change Notices

None

Product Support Bulletins

None

Related Documentation

TM-ACTSCANII	ActionScanner II Service Manual
PL-ACTSCANII	ActionScanner II Parts Price List
4004518	ActionScanner II User's Guide
CPD-3142	ActionScanner II Getting Started (for the PC)
CPD-3143	ActionScanner II Getting Started (for the Mac)